

**UNITED STATES DEPARTMENT OF AGRICULTURE**  
**FOREST SERVICE**  
**SPECIFICATION FOR**  
**FIRE HOSE CONNECTIONS AND FITTINGS**

**1. SCOPE.**

1.1. Scope. The fire hose connections and fittings described in this specification are used on USDA Forest Service fire hose. These connections and fittings are tightened by hand or by a rocker lug type spanner wrench. Thread series designations are 3/4 inch 14 NPSH, 1 inch 11-1/2 NPSH, 1 inch 8 NH, 1-1/2 inch 9 NH, 1-1/2 inch 11-1/2 NPSH, 2 inch 11-1/2 NPSH, 2-1/2 inch 7-1/2 NH, 2-1/2 inch 8 NPSH, and 4 inch 4 NH. Working pressure is up to 600 psig.

**2. APPLICABLE DOCUMENTS.**

2.1. Government Documents. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those in effect on the date of the invitation for bids or request for proposals.

USDA Forest Service Standard

5100-190 - Threads, Gaskets, Rocker Lugs, Connections, and Fittings, Fire Hose

Copies of USDA Forest Service Standards are available from USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, CA 91773-3198.

2.2. Non-Government Publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those in effect on the date of the invitation for bids or request for proposals.

American Society for Quality (ASQ)

ANSI/ASQ Z 1.4 - Sampling Procedures and Tables for Inspection by Attributes

Address requests for copies to the American Society for Quality, P.O. Box 3005, Milwaukee, WI 53201-3005.

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Beneficial comments, recommendations, additions, deletions and any pertinent data that may be used in improving this document should be addressed to: USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, CA 91773-3198 by using the Specification Comment Sheet at the end of this document or by letter.

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ASTM International

B 26 - Aluminum-Alloy Sand Castings

B 221 - Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes

B 241 - Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube

Address requests for copies to ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

Society of Automotive Engineer (SAE)

AMS-QQ-A-225 General Specification For Aluminum and Aluminum Alloy Bar, Rod, Wire, or Special Shapes; Rolled, Drawn, or Cold Finished;

AMS-QQ-A-225/10 Aluminum Alloy 6262, Bar, Rod, and Wire; Rolled, Drawn, or Cold Finished

AMS-QQ-A-367 Aluminum Alloy Forgings;

Address requests for copies to SAE World Headquarters, 400 Commonwealth Drive, Warrendale, PA 15096-0001 USA.

Non-Government standards and other publications normally are available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.

2.3. Order of Precedence. In the event of conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3. REQUIREMENTS.

3.1. First Article. Unless otherwise specified, first article inspection shall be performed on a product sample(s) in accordance with 4.4.3. During the term of the contract the contractor shall be required to notify the contracting officer in writing when a component, or the component supplier, changes in any way; when a major manufacturing process changes in any way; and when a manufacturing location changes. The contracting officer may at any time require the contractor to submit a new first article sample when substantive changes occur during the term of the contract.

3.2. Construction. Connection and fitting configurations shall be as shown in figures 1 through 8. Figures 1 through 8 are provided for information only and are not intended to designate a particular design or manufacturer. A gasket recess shall be included and gasket shall be installed in each female threaded connection and fitting. The items referred to in this section are typical configurations that are considered standard in the USDA Forest Service. Diameter dimensions do not include rocker lugs.

3.2.1. Thread Adapter. The thread adapter is illustrated in figure 1 and the dimensions are indicated in Table 1. The female and male ends have the same waterway dimensions, but have different threads. The adapter is used to connect a male connection of one type thread to a female connection of another type thread.

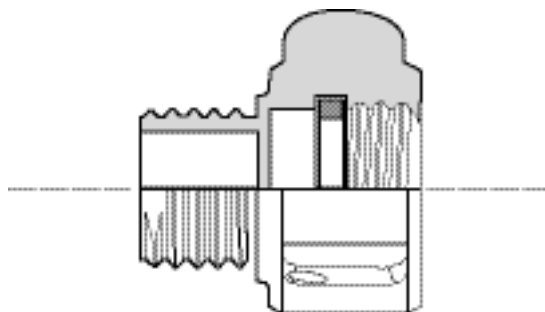


Figure 1. Thread adapter configuration.

Table 1. Thread adapter maximum dimensions

Combination Type	Thread Series Designation		Maximum Dimensions	
	Female	Male	Length (inch)	Diameter (inch)
A	3/4 NPSH	3/4 NH	1.50	1.75
B	3/4 NH	3/4 NPSH	1.50	1.75
C	1 NH	1 NPSH	1.50	1.75
D	1 NPSH	1 NH	1.50	1.75
E	1-1/2 NPSH	1-1/2 NH	1.50	2.50
F	1-1/2 NH	1-1/2 NPSH	1.50	2.50
G	2-1/2 NPSH	2-1/2 NH	2.25	3.56
H	2-1/2 NH	2-1/2 NPSH	2.25	3.56

3.2.2. Reducer. The reducer is illustrated in figure 2 and the dimensions are indicated in table 2. The female end is reduced to a smaller male end. This reducer is used to connect a larger size male connection to a smaller size female connection.

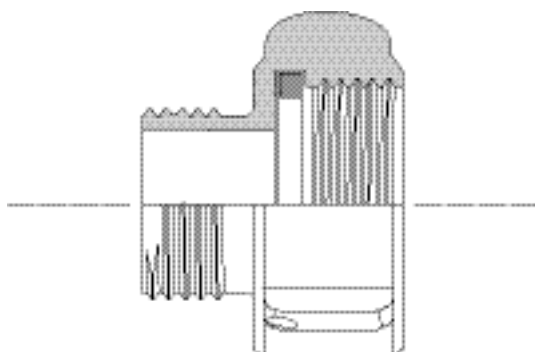


Figure 2. Reducer configuration.

Table 2. Reducer maximum dimensions

Combination Type	Thread Series Designation		Maximum Dimensions	
	Female	Male	Length (inch)	Diameter (inch)
A	1 NPSH	3/4 NH	1.50	1.75
B	1 NPSH	3/4 NPSH	1.50	1.75
C	1-1/2 NH	3/4 NH	1.50	2.50
D	1-1/2 NH	1 NPSH	1.50	2.50
E	1-1/2 NPSH	1 NPSH	1.50	2.50
F	2-1/2 NH	1-1/2 NH	2.00	3.56
G	2-1/2 NPSH	1-1/2 NH	2.00	3.56
H	2 NPSH	1-1/2 NH	1.75	3.00

3.2.3. Increaser. The increaser is illustrated in figure 3 and the dimensions are indicated in table 3. The female end is increased to a larger size male end. The increaser is used to connect a smaller size male connection to a larger size female connection.

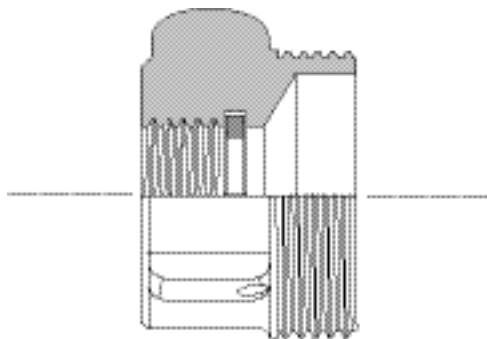


Figure 3. Increaser configuration.

Table 3. Increaser maximum dimensions

Combination Type	Thread Series Designation		Maximum Dimensions	
	Female	Male	Length (inch)	Diameter (inch)
A	3/4 NPSH	1 NPSH	1.50	1.75
B	3/4 NH	1 NPSH	1.50	1.75
C	1 NPSH	1-1/2 NH	1.50	2.25
D	1 NPSH	1-1/2 NPSH	1.50	2.25
E	1-1/2 NPSH	2-1/2 NH	1.88	3.56
F	1-1/2 NH	2-1/2 NPSH	1.88	3.56

3.2.4. Double Male Coupling. The double male coupling is illustrated in figure 4 and the dimensions are indicated in table 4. Both ends are the same male thread series designation. The coupling is used to connect female connections.

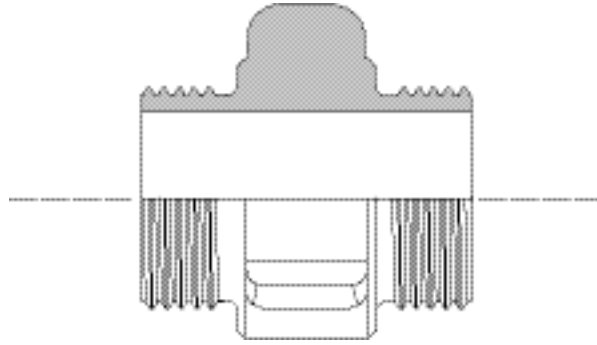


Figure 4. Double male coupling configuration.

Table 4. Double male coupling dimensions

Combination Type	Thread Series Designation	Maximum Dimensions	
		Length (inch)	Diameter (inch)
A	1 NPSH	2.13	1.75
B	1-1/2 NPSH	2.13	2.50
C	1-1/2 NH	2.13	2.50

3.2.5. Double Female Coupling. The double female coupling is illustrated in figure 5 and dimensions are indicated in table 5. Both ends are swiveled with the same size female threads. This coupling is used to connect male connections.

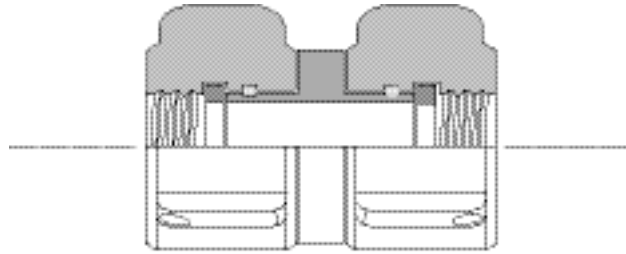


Figure 5. Double female coupling configuration.

Table 5. Double female coupling dimensions

Combination Type	Thread Series Designation	Maximum Dimensions	
		Length (inch)	Diameter (inch)
A	1 NPSH	2.25	1.75
B	1-1/2 NPSH	2.25	2.50
C	1-1/2 NH	2.25	2.50

3.2.6. Cap with Chain. The cap with chain is illustrated in figure 6 and dimensions are indicated in tables 6a and 6b. The chain shall be single jack brass, or other type with equal strength and flexibility.

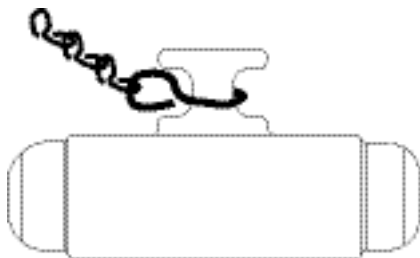


Figure 6. Cap with chain configuration.

Table 6a. Chain dimensions

Thread Series Designation	Chain Number	Length (inch)	Tolerance (inch)
3/4 NH or NPSH	14	4.0	+ 1 inch
			- 0 inch
1 NH or NPSH	14	4.0	+ 1 inch
			- 0 inch
1-1/2 NH or NPSH	12	6.0	+ 1 inch
			- 1 inch
2-1/2 NH or NPSH	12	6.0	+ 1 inch
			- 1 inch

Table 6b. Cap dimensions

Combination Type	Thread Series Designation	Maximum Dimensions	
		Length (inch)	Diameter (inch)
A	3/4 NPSH	1.13	1.75
B	3/4 NH	1.13	1.75
C	1 NH	1.13	1.75
D	1 NPSH	1.13	1.75
E	1-1/2 NPSH	1.25	2.50
F	1-1/2 NH	1.25	2.50
G	2-1/2 NPSH	2.75	3.56
H	2-1/2 NH	2.75	3.56

3.2.7. Hose Line Tee and Cap with Chain. The hose line tee and cap with chain are illustrated in figure 7. Hose line tee dimensions are indicated in table 7. The female end and the male ends are the same size, but the male tee branch size and threads may be different. A cap with chain as described in 3.2.6, shall be attached to the tee branch. The hose line tee is used to connect a male hose connection to the female end and a female hose connection to the male end. The tee branch male end can be capped or uncapped and connected to a female connection. For combination types B and C (with 1 inch NPSH branch), the tee branch waterway diameter shall be 0.88 minimum.

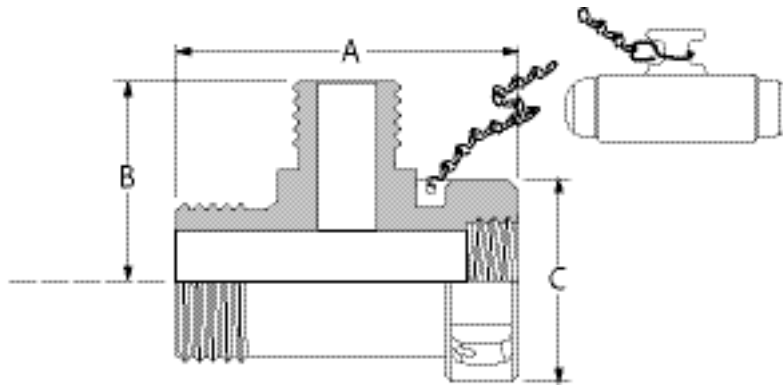


Figure 7. Hose line tee with cap and chain configuration.

A = Overall length

B = Centerline waterway to maximum distance of tee branch

C = Inlet outside diameter

Table 7. Hose line tee with cap and chain dimensions.

Combination Type	Thread Series Designation			Maximum Dimensions			Maximum Weight
	Female	Male	Branch	A Length (inch)	B Centerline Waterway to Maximum Distance (inch)	C Inlet Outside Diameter (inch)	(ounces)
A	1 NPSH	1 NPSH	3/4 NH	3.75	1.50	1.63	8.0
B	1 NPSH	1 NPSH	1 NPSH	3.75	1.50	1.63	8.0
C	1-1/2 NH	1-1/2 NH	1 NPSH	3.75	1.88	2.50	8.0

3.2.8. Hose Line Tee with Valve. The hose line tee with valve is illustrated in figure 8 and the dimensions are indicated in table 8. The female end and the male ends are the same size, but the male tee branch size and thread series designations are different. The tee branch includes a screw-type valve. The hose line tee with valve is used to connect a male hose connection to the female end; and a female hose connection to the male end. The tee branch male end can be connected to a female connection. The screw type valve shall be assembled in a manner to prevent separation from the hose line tee body. The hose line tee body and screw type valve threads shall remain engaged through full range of motion. The tee branch waterway diameter shall be 0.75 minimum. The acquisition document may require a cap with chain as described in 3.2.6. A point of attachment for the cap with chain shall be at the male threaded section as indicated in figure 8.

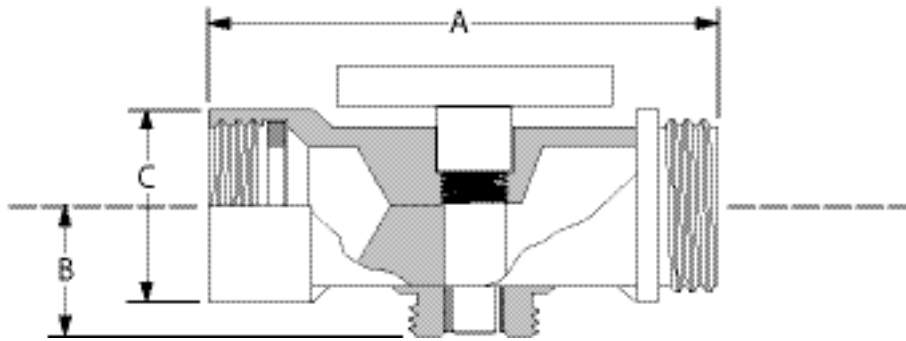


Figure 8. Hose line tee with valve configuration.

A = Overall length

B = Centerline waterway to maximum distance of tee branch

C = Inlet outside diameter

Table 8. Hose line tee dimensions

Thread Series Designation			Maximum Dimensions			Maximum Weight
Female	Male	Branch	A Length  (inch)	B Centerline Waterway to Maximum Distance (inch)	C Inlet Outside Diameter (inch)	(ounces)
1-1/2 NH	1-1/2 NH	1 NPSH	5.06	1.38	2.50	18.0

3.3. Materials. Where more than one type of material is used in various components, there shall be no incompatibility between materials which may cause corrosion.

3.3.1. Connection and Fitting Material. The material for thread adapters, reducers, increasers, double male

couplings and double female couplings shall conform to the following:

- a. Aluminum alloy, 6061-T6 or 6262-T651 (not 6262-T6), in accordance with ASTM B 221 or B 241, or
- b. Aluminum alloy, 6061-T6, in accordance with SAE-AMS-QQ-A-367, or
- c. Aluminum alloy, 6262-T9, in accordance with SAE-AMS-QQ-A-225/10.

The material for the hose line tee, cap with chain, and hose line tee with valve shall conform to the following:

- a. Aluminum alloy, 356-T6, in accordance with ASTM B 26 or
- b. Aluminum alloy, 6061-T6, in accordance with ASTM B 221 or B 241 or
- c. Aluminum alloy, 6061-T6, in accordance with SAE-AMS-QQ-A-367 or
- d. Aluminum alloy, 6262-T9, in accordance with SAE-AMS-QQ-A-225/10.

The material for the chain shall be as specified in 3.2.6 and table 6a.

3.3.2. Gasket Material. Gasket material physical properties shall meet the requirements of USDA Forest Service Standard 5100-190.

3.3.3. Recoverable Materials. The contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR), provided all performance requirements of this specification are met.

3.4. Dimensions. Dimensions shall be as shown in tables 1 through 8.

3.4.1. Dimensional Tolerance. Unless otherwise noted, the following tolerances apply: one place (x.x) +/- 0.1 inch; two places (x.xx) +/- 0.03 inch, and three places (x.xxx) +/- 0.010 inch.

3.5. Workmanship. Workmanship shall be equal to the best commercial practices consistent with the highest engineering standards in the industry and shall be free from any nonconformance which may impair serviceability or detract from the product's appearance.

3.5.1. Symmetry. All metal part sections shall be symmetrical and concentric to 0.030 inch.

3.5.2. Forged or Extruded Components. Forged and extruded sections shall be free from laps, sharp die marks, cracks, or other nonconformities.

3.5.3. Cast Components. Cast parts shall be fine-grained, free from blowholes, pinholes, pits, porosity, hard spots, shrinkage, cracks, or other nonconformities.

3.6. Threads, Waterways, Gaskets, Gasket Recesses and Rocker Lugs. Threads, waterways, gaskets, gasket recesses, and rocker lugs shall be in accordance with USDA Forest Service Standard 5100-190.

3.7. Marking. Markings shall be accordance in with USDA Forest Service Standard 5100-190.

3.8. Surface Treatment. Aluminum alloy surfaces, to include threaded surfaces shall be hardcoated in accordance with USDA Forest Service Standard 5100-190.

3.9. Surface Finish. The finish for all surfaces, to include threaded surfaces, shall be in accordance with USDA Forest Service Standard 5100-190.

3.10. Performance.

3.10.1. Proof Pressure (All products). When tested in accordance with 4.6.2, the connection or fitting shall withstand a hydrostatic working pressure of 600 psig with no leaks, permanent deformation, mechanical damage, or structural failure. The connection or fitting shall also withstand a hydrostatic proof pressure of 1,200 psig with no permanent deformation, mechanical damage, structural failure, or leakage greater than six drops per minute.

3.10.2. Flow Rate (Hoseline tee with valve only). When tested in accordance with 4.6.3, the tee branch of the hose line tee with valve (see 3.2.8) shall have a minimum flow rate of 90.0 gpm at an inlet pressure of 100 psig.

#### 4. INSPECTION, SAMPLING, AND TEST PROCEDURES.

4.1. General Inspection and Tests. Unless otherwise specified in the contract or purchase order, the contractor is responsible for performance of all inspection requirements prior to submission for Government acceptance inspection and tests. The contractor may utilize their own facilities or any commercial laboratory acceptable to the Government. Inspection records of the examination and tests shall be kept complete and available to the Government.

4.1.1. Inspection and Test Site. The Contractor shall conduct lot acceptance inspection and tests to determine compliance with the specification. If lot acceptance and tests are conducted at locations other than the manufacturing facilities, the contracting officer will specify location and arrangements. In the case of onsite inspections at the contractor facility, the contractor shall furnish the inspector all reasonable facilities for their work. During any inspection, the inspector may take from the lot one or more samples and submit them to an independent test laboratory approved by the Government or to a Government test facility for inspection and tests.

4.1.2. Testing With Referenced Documents. The contractor is responsible for insuring that components and materials used were manufactured, examined, and tested in accordance with referenced specifications and standards. The Government reserves the right to perform any of the inspections or tests set forth in this section where such action is deemed necessary to assure supplies and services conform to prescribed requirements.

4.2. Responsibility for Compliance. All items shall meet all requirements of sections 3 and 4. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in this specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known nonconforming material, either indicated or actual, nor does it commit the Government to accept nonconforming material.

4.3. Sampling for Inspection. When inspection is performed, sampling shall be in accordance with ANSI/ASQ Z 1.4.

4.3.1. Lot. All fire hose connections and fittings of the same construction and of one size presented together in one delivery shall be considered a lot for the purpose of inspection. A sample unit shall be one item.

4.3.2. Sampling for Visual and Dimensional Examination. Sampling for visual and dimensional examination shall be S-3, with an Acceptable Quality Level (AQL) of 2.5 percent nonconforming.

4.3.3. Sampling for Lot Acceptance Tests. Sampling for lot acceptance testing shall be S-3 with an AQL of 2.5 percent nonconforming.

#### 4.4. Inspection and Tests.

4.4.1 Visual and Dimensional Examination. When selected in accordance with 4.3.2, each sample fire hose connection and fitting shall be visually and dimensionally examined to determine conformance with this specification. Visual or dimensional nonconformities shall be classified as major or minor. A nonconformance not listed in table 9 shall be classified as a minor nonconformance. If the number of nonconformities in any sample exceeds the indicated AQL, the lot shall be rejected.

Table 9. Major and minor nonconformities

	Classification	
	Major	Minor
1. Item not complete.	X	
2. Thread dimensions not within specified dimensions and failure to pass gauge tests.	X	
3. Waterway diameter not as required.	X	
4. Gasket recess or gasket not as required.	X	
5. Workmanship and finish not as required.	X	
6. Rocker lugs not as required.	X	
7. Material or hardcoating not as required.	X	
8. Dimensions not as required.	X	
9. Weight not as required.	X	
10. Blunt start (Higbee) not as required.	X	
11. Threads not smooth or otherwise free of imperfections.		X
12. Illegible or improper markings.		X
13. Higbee indicator not as required.		X

4.4.2. Lot Acceptance Tests. Each of the samples selected in accordance with 4.3.3, shall be tested in accordance with 4.6, to determine conformance with requirements of this specification.

4.4.3. First Article Inspection. Unless otherwise specified (see 6.2), the first article sample(s) indicated in 3.1, shall be inspected as specified in 4.4.1 and 4.6. All inspection and testing of the first article sample(s) shall stop upon a single failure and the sample(s) rejected. The contractor will be informed as to the nature of the failure, but the Government shall not be obligated to continue testing a nonconforming item, once it is known to be nonconforming or when it is considered in the best interest of the Government.

4.4.4. Quality Conformance Inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with ANSI/ASQ Z 1.4. The inspection level and AQL shall be as specified in 4.3.3.

4.5. Certificate of Conformance. A Certificate of Conformance shall meet the requirements of USDA Forest Service Standard 5100-190. Where certificates of conformance are required, the Government reserves the right to verify test any such items to determine the validity of certification. These certificates shall be based on the testing of component materials and may be performed by the component material supplier. The contractor shall provide certificates of conformance for all materials used in 3.3.1, 3.3.2 and 3.8 (see 4.5.2, 4.5.3 and 4.5.4).

4.5.1. Certificates of Conformance in Lieu of Testing. Unless otherwise specified, certificates of conformance may be acceptable in lieu of testing end items.

4.5.2. Connection or Fitting Material. As required by 3.3.1, connection or fitting material shall meet the indicated material physical property requirement listed, when tested to defined test method.

4.5.3. Gasket Test. As required by 3.3.2, gasket material physical properties shall meet the requirements of USDA Forest Service Standard 5100-190.

4.5.4. Surface Treatment. As required by 3.8, aluminum alloy surfaces, to include threaded surfaces, shall be hardcoated in accordance with USDA Forest Service Standard 5100-190.

4.6. Performance Testing. Samples shall be subjected to the following tests to determine if the samples meet the requirements of this specification.

4.6.1. Fluid Medium. All testing requiring the use of a fluid medium shall be performed using municipally supplied potable water; this shall include, but is not limited to pressure testing. If the contractor does not have access to a municipal water supply, the testing shall be performed using any clear fresh water normally available for firefighting. First article testing performed by the Government will be conducted using municipally supplied potable water.

4.6.2. Proof Pressure Test. As required by 3.10.1, a connection or fitting shall be tested for proof pressure by attaching it to a water pressure source. A blank orifice (cap) shall be installed in the discharge/outlet. When proof pressure testing a hose line tee with valve, the valve shall first be tested in a fully closed position with the tee outlet capped and the tee branch uncapped. The valve will then be tested in a fully open position, with both the tee outlet and the tee branch capped. Fully open position means until turning is prevented by a mechanical stop. When proof pressure testing a cap, the cap shall be installed on a fire hose connection or fitting in preparation for testing. A hydrostatic pressure of 600 psig shall be applied and held for 3 minutes. The rate for applying hydrostatic pressure shall not be less than 300 psig per minute and not more than 600 psig per minute, i.e., at a uniform rate over a 1 to 2 minute time interval. There shall be no leaks, permanent deformation, mechanical damage, or structural failure. Increase the hydrostatic pressure to 1,200 psig at the same rate and hold for 3 minutes. There shall be no permanent deformation, mechanical damage, structural failure, or leakage greater than six drops per minute. Reduce the hydrostatic pressure to 600 psig at the same rate and hold for 3 minutes. There shall be no leaks, permanent deformation, mechanical damage, or structural failure.

4.6.3. Flow Rate Test. As required by 3.10.2, the tee branch of the hose line tee with valve shall be tested for flow rate by attaching the hose line tee inlet to a water pressure source. A blank orifice (cap) shall be installed on the hose line tee outlet. The flow rate through the valved tee branch with the valve fully open shall be a minimum of 90.0 gallons per minute at 100 psig .

## 5. PACKAGING, PACKING, AND MARKING.

5.1. Packaging, Packing, and Marking. The packaging, packing, and marking shall be as specified in the contract or order.

6. NOTES.

6.1. Intended Use. The fire hose connections and fittings described in this specification are used on fire engines and hose lays in wildland firefighting.

6.2. Acquisition Requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. If a first article sampling and inspection is not required (see 3.1, 4.4.3, and 6.3).
- c. Size of each type of connection or fitting required.
- d. If certificates of conformance are acceptable in lieu of lot by lot testing (see 4.4.2 and 4.5).
- e. Packaging, packing, and marking (see 5.1)

6.3. First Article. When a first article sample(s) is required, it shall be inspected and approved in accordance with the first article clauses set forth in the solicitation. Specific instructions shall be included regarding arrangements for selection, inspection, and approval of the first article sample(s).

6.4. Notice. When Government drawings, documents, or other data are used for any purpose other than in connection with a related Government procurements operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever.

6.5. Preparing Activity. USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, CA 91773-3198.

United States Department of Agriculture, Forest Service  
Standardization Document Improvement Proposal

**Instructions:** This form is provided to solicit beneficial comments which may improve this document and enhance its use. Contractors, government activities, manufacturers, vendors, or other prospective users of this document are invited to submit comments to the USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, California 91773-3198. Attach any pertinent data which may be of use in improving this document. If there is additional documentation, attach it to the form and place both in an envelope addressed to the preparing activity. A response will be provided when a name and address are included.

**Note:** This form shall not be used to submit request for waivers, deviation, or for clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

Standard Number and Title: **Specification 5100-107d, Fire Hose Connections and Fittings**

Name of Organization and Address:

\_\_\_\_ Vendor      \_\_\_\_ User      \_\_\_\_ Manufacturer

1. \_\_\_\_ Has any part of this document created problems or required interpretation in procurement use?

\_\_\_\_ Is any part of this document too rigid, restrictive, loose, or ambiguous?  
Please explain below.

Give paragraph number and wording:

Recommended change (s):

Reason for recommended change (s):

Remarks:

Submitted by: (Print or type name and address - Optional)

Telephone number:  
(Optional)

Date:

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USDA Forest Service  
San Dimas Technology & Development Center  
Attn: Water Handling Project Leader  
444 East Bonita Avenue  
San Dimas, California 91773-3198

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Fold and staple for mailing